AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) An analytical shell-model producing apparatus, for producing converting a configuration model produced by a three-dimensional configuration modeler into an analytical shell-model for use in numerical analyzing from a configuration model, which is produced by a three-dimensional configuration modeler, analysis, comprising:

a reference-plate thickness size inputting means for inputting a reference-plate thickness size to be used when specifying a thin-plate portion from the configuration model; and

a pair-surfaces acknowledging means for acknowledging two (2) surfaces as pair-surfaces data, being equal or less than the reference-plate thickness size, which is inputted by said reference-plate thickness inputting means, in face-to-face distance between two (2) arbitrary surfaces constructing the configuration model;

a top-bottom side rib attributes acknowledging means for classifying the pair-surfaces data registered by said pair-surfaces acknowledging means into a top-side surface, a bottom-side surface and a rib surface, through producing a neighboring graph of connecting nodes themselves to the neighboring surfaces by edges, with presuming the surfaces to be nodes to the configuration model, and searching a loop including two (2) or more of the edges of a pair attribute, while determining a non-rib surface when the number of nodes within the loop is equal or less than four (4), and thereby registering the attributes as top-side surface data, bottom-side surface data, and rib surface data, respectively

an offset surface producing means for producing surfaces by offsetting a group of surfaces of either one of the top-side surface data, the bottom-side surface data or the rib surface data, which are registered by said top-bottom side rib attributes acknowledging means, into a normal direction to an internal direction of each configuration, and for registering the surfaces offset as offset surface data;

a seaming surface producing means or producing a surface, by extending the offset surface data, which is produced from the rib surface by said offset surface producing means, until it intersects the offset surface data, which is produced from either of the top or the bottom surface, and for registering the surface data extending the offset surface data, which is produced from said rib surface, and the offset surface data, which is produced from either one of the top or the bottom surface, as seaming surface data; and

an internal-surface model producing means for registering the seaming surface, which is registered by said seaming surface producing means as an internal-surface model.

~~means for making two (2) surfaces, being narrower therebetween than the reference-plate thickness size, which is inputted from said reference-plate thickness inputting means, in a pair of surfaces, producing an offset-surface between the pair of surfaces, and producing an internal-surface model by seaming on an outer periphery portion of the offset-surface.~~

2. (Currently Amended) The analytical shell-model producing apparatus, as described in the claim 1, further comprising means for producing a thickness attribute of said internal-surface model from face-to-face distance between the surfaces of said pair of surfaces and the reference-plate thickness ~~a value of the plate thickness~~.

- 4 -

3. (Currently Amended) An analytical shell-model producing apparatus for converting a configuration model produced by a three-dimensional configuration modeler into an analytical shell-model for numerical analysis, comprising:

a reference-plate thickness inputting means for inputting a reference-plate thickness size to be used when specifying a thin-plate portion from the configuration model;

a pair-surfaces acknowledging means for acknowledging two (2) surfaces, being equal or less than the reference-plate thickness size, which is inputted by said reference-plate thickness inputting means, in face-to-face distance between ~~the arbitrary~~ two (2) arbitrary surfaces constructing the configuration model;

a top/bottom side rib attribute acknowledging means for acknowledging the two (2) surfaces ~~the pair-surfaces~~ acknowledged by said pair-surfaces acknowledging means to be one of a top side surface, a bottom side surface, and a rib surface;

an offset-surface producing means for producing an offset-surface by offsetting a group of surfaces on either the top side or the bottom side, which are acknowledged by said top/bottom side rib attribute acknowledging means, and the rib surface, respectively, in direction of a normal line towards the inside of the configurations thereof;

a seam-surface producing means for seaming between the offset-surface, which is produced from either the top or the bottom surface by means of said offset-surface producing means, and also the offset-surface produced from the rib surface; and

an internal-surface producing means for registering the offset-surface seamed by said seam-surface producing means, as in a form of an internal-surface model.

4. (Original) The analytical shell-model producing apparatus, as described in the claim 3, further comprising a top/bottom rib attribute emphatic displaying means for displaying the top side surface, the bottom side surface and the rib surface, which are acknowledged by said top/bottom side rib attribute acknowledging means, with making emphasis thereon.

5. (Original) The analytical shell-model producing apparatus, as described in the claim 3, further comprising a dialog top/bottom side rib attribute amending means for amending the top side surface, the bottom side surface and the rib surface, which are acknowledged by said top/bottom side rib attribute acknowledging means, in a manner of dialog.

6. (Currently Amended) The analytical shell-model producing apparatus, as described in the claim 3, wherein said internal-surface model producing means calculates the plate thickness on each of the internal-surface models as targets from the face-to-face <u>distance between the two (2) surfaces,</u> ~~distance between two (2) surfaces of the pair,~~ and wherein this calculated plate thickness is set as the thickness attribute of the internal surface model of the target.